WHAT IS CLAIMED IS:

1. - 22. (canceled)

23. (previously presented) A metallic object comprising a coating that is comprised of a thin metal oxide layer and nucleic acid compounds selected from the group consisting of nucleic acids and nucleic acid derivatives, wherein the nucleic acid compounds have 5'-terminal or 3'-terminal molecule areas and wherein the 5'-terminal or 3'-terminal molecule areas are incorporated stably into the metal oxide layer.

24. (previously presented) The object according to claim 23, wherein the unincorporated areas of the nucleic acid compounds that are not incorporated into the metal oxide layer are freely accessible to a large extent for subsequent interactions with other molecules.

25. (previously presented) The object according to claim 23, wherein the incorporated 5'-terminal or 3'-terminal molecule areas have inorganic groups.

26. (previously presented) The object according to claim 25, wherein the inorganic groups are selected from the groups consisting of phosphate, phosphonate, and sulfonate.

27. (previously presented) The object according to claim 23, wherein the metal of the metallic object is a valve metal or a valve metal alloy.

28. (previously presented) The object according to claim 23, wherein the metal of the metallic object is selected from the group consisting of aluminum, titanium, tantalum, zirconium, niobium, and an alloy of one or more of the metal.

29. (previously presented) The object according to claim 28, wherein the alloy is an intermetallic phase.

30. (currently amended) The object according to claim 23, wherein the nucleic acid compounds are selected from the group consisting of desoxyribonucleic acids (DNA), ribonucleic acids (RNA), peptide nucleic acids (PNA), locked nucleic acids (LNA), and mixed molecules of DNA ~~DAN~~, RNA, PNA, and LNA.

31. (previously presented) The object according to claim 30, wherein the nucleic acid compounds have modifications of the sugar phosphate backbone caused by modifying agents, wherein the modifying agents are selected from the group consisting of phosphothioates, O-methyl groups, and unconventional bases.

32. (previously presented) The object according to claim 23, wherein the nucleic acid compounds are present at least partially as individual strands.

33. (previously presented) The object according to claim 32, further comprising additional nucleic acid strands bonded by complementary base pairs to the individual strands.

34. (previously presented) The object according to claim 33, wherein the individual strands immobilized on the metal oxide surface and the additional strands are covalently bonded.

35. (previously presented) The object according to claim 33, further comprising active ingredients selected from the group consisting of inorganic molecules, organic molecules, biochemical molecules, cell components, and tissue components, wherein the active ingredients are bonded to the additional nucleic acid strands.

36. (previously presented) The object according to claim 35, wherein the inorganic molecules or organic molecules comprise radioactive elements.

37. (currently amended) A method for manufacturing a metallic object according to claim 23 ~~comprising a coating that is comprised of a thin metal oxide layer and nucleic acid compounds selected from the group consisting of nucleic acids and nucleic acid derivatives~~, the method comprising the steps of:

contacting a metallic substrate surface with nucleic acid compounds having anionic groups at least at one terminal molecule area and metastably fixing the nucleic acid compounds through the anionic groups on the metallic substrate surface by regiospecific interactions;

simultaneously or subsequently, anodically polarizing the metallic substrate surface in an electrolyte solution and growing a metal oxide layer incorporating the at least one terminal molecular area.

38. (previously presented) The method according to claim 37, wherein a pH value and an ion strength are provided at which the anionic groups are negatively charged and the metallic substrate surface has at least locally some positive charge centers.

39. (previously presented) The method according to claim 38, wherein the pH value is in a range between 3.0 and 5.0.

40. (previously presented) The method according to claim 37, wherein a

potential in the step of anodically polarizing is limited to a value between 2 and 200 V_{SCE} so that a sufficiently stable incorporation of the nucleic acid compounds into the metal oxide layer is provided but growth of the metal oxide layer into a recognition area of the nucleic acid compounds required for other processes is prevented.

41. (previously presented) A method for immobilizing complementary nucleic acid compounds selected from the group consisting of nucleic acids and nucleic acid derivatives on a metallic object according to claim 23, the method comprising the steps of:

selecting a pH value and an ion strength such that the metal oxide layer of the metallic object is negatively charged and a nucleic acid backbone of the nucleic acid compounds of the coating of the metallic object is negatively charged or not charged.

42. (previously presented) The method according to claim 41, wherein the ion strength is in a range of 0.1 to 1.5 mol/liter and the pH value is in a range of pH 5.5 to 8.5.

43. (previously presented) The method according to claim 41, further comprising active ingredients selected from the group consisting of inorganic molecules, organic molecules, biochemical molecules, cell components, and tissue components, wherein the active ingredients are bonded to the nucleic acid compounds.

44. (previously presented) The method according to claim 43, wherein the inorganic molecules or organic molecules comprise radioactive elements.